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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/535,540

12/14/2005

Cameron James King

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EXAMINER

YAKULIS, JEFFREY C

ART UNIT

PAPER NUMBER

1795

MAIL DATE

DELIVERY MODE

10/18/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

Application No.

10/535,540

Applicant(s)

KING, CAMERON JAMES

Examiner

Jeff Yakulis

Art Unit

1795

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 14 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☒ Claim(s) 6-8 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on 14 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 5/18/2005.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Objections*

1. Claim 6-8 are objected to because of the following informalities: claim 6 is an incomplete sentence as written, it appears "means in a voltage" should be replaced with "means is a voltage". Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-4 are rejected under 35 U.S.C. 102(e) as being anticipated by Johnny (2002/0185446).

Regarding claim 1, Johnny teaches a plurality of electrode plates (paragraph 75), electrical connections (busbar) [30, 32] are arranged normal to electrode plates [41, 42, 43] and provide for electrical connection through an aperture in the electrochemical cell (figure 8, paragraph 75 and 76), the arrangement of the electrical connections (busbar) [30,32] and the electrical connectors [57, 60] of to the electrode plates [55, 59] provide for flow of liquid between the plates so as to avoid contact of the liquid with the electrical connectors [57, 60] (figures 9-12 and paragraph 77), a threaded bolt [42] extending

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across the electrode plates consisting of conductive spacers [36] and spring washers [38] (paragraph 76).

Regarding claim 2, Johnny teaches threaded electrical connectors (busbar) [30, 32] with associated washers [38] and nuts [39] used to secure the electrode assembly (figure 8 and paragraph 76).

Regarding claim 3, Johnny teaches dc power being applied to the electrical connectors (busbar) [30, 32] and the connectors extending through an aperture within the electrochemical cell (figure 8 and paragraph 76).

Regarding claim 4, Johnny teaches dc power being applied to the electrical connectors [30, 32] and nuts [39] fastened to either side of the connectors (figure 8 and paragraph 76).

4. Claims 5-10 and 13-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Leisle et al. (2,864,750).

Regarding claim 5, Leisle et al. teaches using a variable resistor to adjust/control the current/voltage applied to electrodes in a water treatment apparatus and voltage/current is applied for an extended period of time at a constant/regulated output (col. 3 line 73.– col. 4 line 9), a transformer connected to the cell (col. 3 lines 47-62), a rectifier working in conjunction with the electrolytic cell (col. 3 lines 47-62), the resistor [58] and variable resistor [59] (provides for regulation of voltage) receives an output from the rectifier or works in conjunction with one and allows for adjustments/firing of the variable resistor [59] based on results from the micro-ammeter [60] (col. 3 lines 47-62).

Regarding claim 6, Leisle et al. teaches a potentiometer commonly referred to as a variable resistor [59] as a means to control the current/voltage (col. 3 lines 47-62).

Regarding claim 7 and 8, Leisle et al. teaches adjusting a variable resistor/potentiometer such that it provides 70 microamps from a power supply having a variety of different voltages (col. 3 lines 72 – col. 4 line 9).

Regarding claims 9 and 10, Leisle et al. teaches a switch being connected to the source of applied potential on the electrodes and further that the switch has the ability to reverse the polarity of the impressed current/voltage onto the electrodes (col. 4 lines 9-22).

Regarding claim 13, 14, 15, and 16, Leisle et al. teaches using a variable resistor to adjust/control the current/voltage applied to electrodes in a water treatment apparatus and voltage/current is applied for an extended period of time at a constant/regulated output (col. 3 line 73 – col. 4 line 9), a transformer connected to the cell (col. 3 lines 47-62), a rectifier working in conjunction with the electrolytic cell (col. 3 lines 47-62), the resistor [58] and variable resistor [59] (provides for regulation of voltage) receives an output from the rectifier or works in conjunction with one and allows for adjustments/firing of the variable resistor [59] based on results from the micro-ammeter [60] (col. 3 lines 47-62), adjusting a variable resistor/potentiometer such that it provides 70 microamps from a power supply having a variety of different voltages (col. 3 lines 72 – col. 4 line 9), a switch being connected to the source of applied potential on the electrodes and further that the switch has the ability to reverse the polarity of the impressed current/voltage onto the electrodes (col. 4 lines 9-22).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claim 11 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leisle et al. (2,864,750) as applied to claims 5 and 13 above, and further in view of Erickson et al. (5,328,584).

Regarding claim 11 and 17, Leisle et al. teaches all the limitations of claim 5 mentioned above and an ammeter [60 (col. 3 line 62) but fails to disclose: a current trip for protection against exceeding an amperage rating of the power supply.

Erickson et al. teaches a power supply system for an electrolytic water treatment apparatus (abstract and figure 1). Erickson et al. teaches a switching circuit [64] is provided to allow for a variety of functions to occur including working with an overload sensor [66] to cut/trip power when a current has exceeded a predetermined threshold (col. 6 line 31-44) and that the over sensor [66] can be an ammeter (col. 6 lines 54-62).

It would have been obvious to one having ordinary skill in the art to use the ammeter and throwing switch of Leisle et al. and adapt it to sense a predetermined threshold of current applied and then cut power once this threshold has been reached as taught by Erickson et al. because it would allow for prevention of overloading current in the electrical circuit making it safer to operate.

8. Claim 12 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leisle et al. (2,864,750) as applied to claims 5 and 13 above, and further in view of Jackson (4,561,955).

Regarding claims 12 and 18, Leisle et al. teaches all the limitations of claim 5 mentioned above but fails to disclose an over temperature relay to sense overheating in the rectifier.

Jackson teaches an electrical cooling apparatus applicable in cooling rectifiers and transformers used in electrolytic water treatment apparatuses (col. 1 lines 9-28). Jackson teaches a 6 V relay connected to a bridge rectifier [2] that is interruptible by a flow dependent switch [9] (col. 2 lines 21-22). Jackson further teaches a cooling apparatus attached to the bridge [2] and transformer [1] coupleable to the flow dependent switch [9] so, as to cool the electrical components and extend the operating life (col. 1 lines 20-37 and col. 2 lines 23-40).

It would have been obvious to use the flow dependent switch coupled to the rectifier as taught by Jackson and include such a configuration to the electrical component configuration taught by Leisle et al. because it would allow for cooling of the

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electrical components in the circuit namely the rectifier and transformer allowing for longer operating lives of the components.

### **Conclusion**

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. JP-10165957, JP-2001-310188, US-3865710.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Yakulis whose telephone number is 571-272-9807.

The examiner can normally be reached on M-F 9:30 AM-7:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexa Neckel can be reached on 571-272-1446. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JCY  
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ALEXA D. NECKEL  
SUPERVISORY PATENT EXAMINER